

Amendment to Claims

1. (original) An apparatus for correcting image data detected by an image sensor

composed of a plurality of sensing elements, comprising:

an operation memory for storing expansion coefficient array data and
basis

function array data, said expansion coefficient array data and said basis function
array data respectively including data of expansion coefficients and function
values of a basis function for orthogonal expansion of a high order polynomial for
correcting the image data; and

an operation part for correcting the image data using the expansion
coefficient array data and the basis function array data.

2. (original) The apparatus according to claim 1, comprising more than one
operation memory and operation part.

3. (original) The apparatus according to claim 1, wherein said expansion
coefficient array data includes the expansion coefficients for each of the sensing
elements.

4. (original) The apparatus according to claim 2, wherein said expansion
coefficient array data includes the expansion coefficients for each of the sensing
elements.

5. (original) The apparatus according to claim 1, wherein said basis function array data includes the basis function values for each of pixel values which the image data may take.
6. (original) The apparatus according to claim 4, wherein said basis function array data includes the basis function values for each of pixel values which the image data may take.
7. (original) The apparatus according to claim 1, wherein said basis function is a Chebyshev function.
8. (original) The apparatus according to claim 6, wherein said basis function is a Chebyshev function.
9. (original) The apparatus according to claim 7, wherein said Chebyshev function is a quadratic to quartic Chebyshev function.
10. (original) The apparatus according to claim 1 wherein said high order polynomial is an equation obtained by approximation of a look-up table (LUT) conversion.
11. (presently amended) The apparatus according to claim 9 wherein said high order polynomial is an equation obtained by approximation of a look-up table (LUT) conversion --.

12. (original) The apparatus according to claim 1, wherein said operation part is an arithmetic circuit of a digital signal processor (DSP) and said operation memory is an internal memory of said DSP.

13. (original) The apparatus according to claim 11, wherein said operation part is an arithmetic circuit of a digital signal processor (DSP) and said operation memory is an internal memory of said DSP.

14. (original) A method for correcting image data detected by an image sensor composed of a plurality of sensing elements, comprising the steps of:

storing expansion coefficient array data and basis function array

data in an operation memory, said expansion coefficient array data and basis function array data respectively including data of expansion coefficients and function values of a basis function for orthogonal expansion of a high order polynomial for correcting the image data;

reading said expansion coefficients and basis function values from said operation memory; and

performing arithmetic operations on said image data with said read expansion coefficients and basis function values to correct the image data.

15. (original) The method according to claim 14, wherein said expansion coefficient array data includes the expansion coefficients for each of the sensing

elements, and in said reading step, the expansion coefficients corresponding to a sensing element detecting image data to be corrected are read for correction of the image data.

16. (original) The method according to claim 15 wherein said basis function array data includes the basis function values for each of pixel values which the image data may take, and in said reading step, the basis function values corresponding to a pixel value of image data to be corrected are read for correction of the image data.

17. (original) The method according to claim 14 wherein said basis function is a Chebyshev function.

18. (original) The method according to claim 16 wherein said basis function is a Chebyshev function.